**N: 111 Pharmacology Blue Print for Final Exam**

**Chapter: 1**

Role of the food and drug administration-------------------------------------------------1

* Pg 5
* Pharmaceutical companies need approval from the FDA to market drugs

**Chapter: 2**

Difference between brand name drugs and their generic equivalent--------------1

* Pg 13
* Generics are less expensive

**Chapter: 4**

Excretion of Medication------------------------------------------------------------------------1

* Pg 41
* Absorption 🡪 Distribution 🡪 Metabolism 🡪 Excretion
* Acidity/Alkalinity factors

**Chapter: 5**

Potency and Efficacy-----------------------------------------------------------------------------1

* Pg 49
* Potency = strength per amount
* Efficacy = greater impact (this one is more desirable)

**Chapter: 6**

Steps of nursing process-----------------------------------------------------------------------1

* Know which comes first, and the sequence

**Chapter: 7**

Pharmacotherapy of preschoolers: Best method of medication administration--------1

* Pg 70
* Sit them on your lap and give a brief explanation.

**Chapter: 8**

Gender influences on pharmacotherapy---------------------------------------------------1

* Pg 81
* Women are more prone to seek medical help than men
* Heart disease traditionally considered a man’s disease
* Alzheimer’s affects more women than men

**Chapter: 9**

Figure 9.1 Categorizing medication error-------------------------------------------------------1

* Pg 86 - diagram
* Category A, B, and G

**Chapter: 13**

* Know the diagram on Pg 128 before you can begin to answer any of these questions!!!

Autonomic nervous system--------------------------------------------------------------------1

* ?

Sympathetic nervous system------------------------------------------------------------------1

* ?

Adrenergic receptor activation/agonist---------------------------------------------------- 1

* (Table 13.2) Pg 132
  + Albuterol

Adrenergic antagonist --------------------------------------------------------------------------1

* (Table 13.3)
  + Carvedilol
  + Atenolol

Beta Agonist/use--------------------------------------------------------------------------------- 1

* Albuterol, for asthma

Beta blockers/precautions----------------------------------------------------------------------1

* Check heart rate and blood pressure before administration

Beta blockers atenolol, metoprolol (selective)/adverse effects -----------------------1

* Cardioselective, so they do NOT cause bronchoconstriction
* Hypotension
* Bradycardia
* Suddenly stopping beta blockers 🡪 hypertension, tachycardia

Anti-cholinergic drug/contraindication ------------------------------------------------------1

* Glaucoma, hypertension, tachycardia (SNS-related symptoms)

Cholinergic agonist/side effect/myasthenia gravis----------------------------------------1

* SLUDGE effects

**Chapter: 18**

Nonpharmacological Techniques for Pain Management ----------------------------------1

* Provide the opportunity to give lower doses of pharmaceuticals (leading to fewer side effects)

Neural Mechanism of control/Substance P / Aδ and C fiber------------------------------1

* Substance P transmits pain signals to the CNS
* Aδ = myelinated (fast)
* C = unmyelinated (slow)

Treatment for opioid dependence---------------------------------------------------------------1

* Methadone
* same effects as opioids without euphoria, preventing patients from experiencing withdrawal symptoms

Narcotic: Morphine/mechanism of action/side effects-------------------------------------1

* Opiate-receptor agonist (mu and kappa)
* Respiratory depression, cardiac arrest… Table 18.2 (underlined effects)

Opioid Antagonist action/mechanism-----------------------------------------------------------1

* Narcan – blocks mu and kappa receptors

Pharmacotherapy with NSAIDS-------------------------------------------------------------------1

* Table 18.3
* Concerns – GI bleeding, aplastic anemia, agranulocytosis, laryngospasm, anaphylaxis, acute renal failure
* Monitor CBC and renal function tests (Cr, BUN)

Classification of Opioid receptor------------------------------------------------------------------1

* Mu, Kappa, Epsilon, Sigma
* Most important = mu and kappa

Opioid adverse effects ------------------------------------------------------------------------------1

* Respiratory depression…

Migraine Headache/Sumatriptan/Adverse effect--------------------------------------------- 1

* Used for vasoconstriction to relieve headache
* Don’t give to patients with angina
* Table 18.4

**Chapter 33**

Role of chemical mediators in inflammation----------------------------------------------------1

* Chemical mediators = histamine released from mast cells
* Vasodilation and increased capillary permeability

NSAIDs/labs to monitor/maximum dose/adverse effects/Interactions-------------------3

* Table 33.2
* Max doses
  + Aspirin =4g/day
  + Ibuprofen = 3.2g/day
  + Naproxen = 1g/day
* Common side effect = nausea/heartburn/stomach pain
* Interactions = aspirin interacts with warfarin
* Labs = CBC, renal function tests (BUN, Cr)

Treating acute or severe inflammation with glucocorticoid/adverse effect -------------2

* Hyperglycemia, Hypertension… Table 33.4
* Taper the dose
* Give only for limited amount of time

Fever/Acetaminophen/mechanism of action/Adverse effect/Interactions---------------3

* Acts at level of hypothalamus to promote peripheral vasodilation to release heat
* Hepatotoxicity
* Interacts with warfarin, alcohol, other hepatotoxic drugs

Nursing Process: Anti-Inflammatory and Anti-Pyretic Therapy-Implementation----------1

* Pg. 474
* Minimizing adverse effects
* 2nd, 3rd, 4th, 5th implementations

**CHAPTER 15 – Drugs for Seizures**

Benzodizepine: Table 15.3 Adverse effects-------------------------------------------------------1

* Lorazepam, Diazepam
* Underlined adverse effects

Table 15.3 Barbiturates Adverse effects-----------------------------------------------------------1

* Phenobarbital
* Underlined adverse effects

Table 15.3 Newer GABA-Related Drugs Adverse effects--------------------------------------1

* Gabapentin
* Underlined adverse effects

Prototype Phenobarbital; Adverse effect /Mechanism of action 1

* What kind of deficiencies? – Dvit, Folate, B9, B12
* Activates GABA-receptors

Table 15.4 Phenytoin like drug: adverse effect 1

* Carbamazepine, Valproic Acid
* Underlined effects

Prototype drug Phenytoin: administration alerts, Interactions 1

* Flush IV with normal saline before administering
* Use IV line with a filter
* Inject into large veins

Prototype drug Ethosuximide action and uses 1

* Used for absence seizures, petit mal
* Depresses activity of neurons in the motor cortex by elevating the neuronal threshold

Patient receiving antiseizure drug therapy: Nursing Process-Implementation 1

* Narrow range between therapeutic level and toxic dose, so we need to monitor the drug level
* Assess for bruising, bleeding, and s/s of infection
* Assess for gingival hyperplasia
* Pregnancy category D
* Do not d/c abruptly, as it may cause status epilepticus

**Chapter 20 – Drugs for Degenerative Diseases of the Nervous system**

Table 20.2 Levadopa, Sinemet, ropinirole, Selegiline: Adverse Effects 2

* Underlined adverse effects

Prototype Drug Levadopa: Drug-Drug Interaction/action/administration alert 3

* Antacids containing Mg, Na – can increase levodopa absorption and cause toxicity
* Pyrodoxine reverses anti-parkinsonian effect of levodopa
* MAOI – contraindication!
* Abrupt withdrawal can cause NMS

Table 20.3 Benztropine (Cogentin), Benadryl: Adverse effect 2

* Paralytic ileus, CV collapse

Nursing Process: Levadopa with carbidopa (implementation-Patient & family education) 1

* Also an intervention r/t the fact that the absorption decreases with a high protein meal or vitamin B6
  + Take it on an empty stomach
* Monitor hepatic and renal function

Prototype drug Benztropine (Cogentin) Adverse Effect /Interactions------------------------------ 1

* Causes insomnia – “so bring your sleeping pills”

**Chapter 21- Drugs for Neuromuscular disorder**

Prototype drug: Dantrolene mechanism of action/Adverse effects-----------------------------------1

* Dizziness, weakness, fatigue…

Table 21.1 Baclofen, clonazepam, Flexeril-Adverse effects 1

* Non-underlined: Drowsiness, dizziness, urinary retention
* Underlined: Respiratory and CV collapse

Table 21.2 Skeletal muscle Direct acting Antispasmodic Adverse effect/labs 1

* Adverse effect = hepatic necrosis
* Labs = AST/ALT

Prototype Dantrolene Contraindications/Interactions 2

* Calcium channel blockers 🡪 V-fib and CV collapse

Prototype Flexeril Action/ Adverse effect/overdose Tx 1

* Adverse effects: look at Table 21.1 (underlined)
* OD 🡪 physostigmine

Skeletal muscle relaxants mechanism of action 1

* Inhibit upper motor neuron activity within CNS

~~Mechanism of action of centrally acting agent and direct acting antispasmodics 1~~

* Question removed

Treating muscle spasms directly at muscle tissue- Botulinum toxin 1

* Pg. 273
* A toxin at high doses
* A safe treatment at low doses

**Chapter 49**

Mechanism of action of cycloplegic drugs 1

* It dilates the pupil and paralyzes ciliary muscles

Pharmacotherapy for minor eye conditions 1

* Visine

Prototype Latanoprost Administration alert/Adverse effect 2

* See table

Correct method of administration of eye drops 1

* See Nursing Process

Medication for middle ear infection 1

* Systemic antibiotics
* Pg 776

Prototype drug timolol: Interactions 1

* Beta-blockers, anticholinergics, nutrates, reserpine, methyldopa, verapamil (can lead to hypotension and bradycardia)

Table 49.3 Otic Preparation Carbamide peroxide, Polumyxin ALL Adverse effects 2

* Pg 776

**Chapter 14 Anxiety & Insomnia**

~~Area responsible for sleep and wakefulness ------------------------------------1~~

* Question removed

~~Indication for the need of pharmacotherapy in patient with anxiety------2~~

* Question removed

~~Treating anxiety and insomnia with CNS agent----------------------------------1~~

* Question removed

Table 14.3 SSRIs------Fluoxetine---Side effect/Adverse effect----------------1

* Underlined ones

Antidepressants-------MAOIs ---------------------------------------------------------1

* Tyramine foods
* Hypertensive crisis

Prototype Drug Escitalopram Action and Uses/Interactions-----------------1

* Pg 156
* Avoid MAOIs, St. John’s Wort
* Action: serotonin reuptake inhibitor

Table 14.4 ~~Clonazepam~~ Diazepam------ Adverse effect--------------------------------------1

* Underlined effects

Table 14.4 Lorazepam------ Adverse effect----withdrawal----------------------1

* In general – the return of anxiety and insomnia

Table 14.5 Antiseizure medication-----------Adverse effect-------------------1

* Phenobarbital
* Underlined effects

Prototype drug Zolpidem----------Adverse effects/Interaction-Herbal & Food—1

* If it is taken with food, the absorption slows

Nursing implication----------------------------------------------------------------------1

* Implementation, Minimizing adverse effects
* 4th, 5th, 6th, 7th
* Use drug for short amount of time

**Chapter 19: Anesthesia**

Stages of general anesthesia----------------------------------------------------------------------1

* Stage 3 is the surgical state – most important for us to know

Topical Anesthetics----------------------------------------------------------------------------------1

* Table 19.1, pg 241
* Apply on a small area of the skin

Table 19.4 Inhaled anesthetics Gas adverse effect------------------------------------------1

* Nitrous oxide – malignant hyperthermia, apnea, cyanosis

Prototype drug Succinylcholine----------------action and uses/Adverse effect----------1

* Pg 253
* Acts on cholinergic receptors at NMJ, causes depolarization causing skeletal muscles to contract…inhibiting repolarization
* Can cause complete paralysis of diaphragm and intercostal muscles (used to breathe)

Inhaled anesthetics---------------nursing implication------------------------------------------ 1

* Pg 249-50
* 5th bullet
* …Report if BP below 90/60

Spinal anesthesia---------post operative care-----priority nursing interventions---------1

* Vitals, Airway

Table 19.1 Methods of local anesthetics administration-------------------------------------1

* How is an epidural, nerve block, spinal anesthetic given?

Table 19.4 halothane---------------------------adverse effect------------------------------------1

* Underlined effects

Table 19.5 Propofol/midazolam/~~ketamine~~-----adverse effect-------------------------------1

* Underlined ones for propofol & midazolam

**Chapter 34:**

Selection of Effective Antibiotic-----------------------------------------------------------------1

* To select one, you need to know C&S results

Table 34.2: Penicillin G sodium/potassium, Amoxicillin-Clavulanate------------------1

* Underlined ones

Prototype Drug Penicillin G sodium/potassium Interactions----------------------------1

* Decreases the effectiveness of oral contraceptives
* Potassium-sparing diuretics may cause hyperkalemia

Table 34.3: Cephalosporins Cephalexin, cefepime Adverse effects--------------------1

* Remember Cefotaxime

Prototype: Tetracycline administration alert/Interactions-------------------------------1

* Milk and magnesium-containing laxatives decrease absorption
* Administer tetracycline and antacids 1-3h apart

Prototype: Erythromycin Action and Uses/~~Adverse effects~~------------------------------1

* Pg 490
* Protein synthesis inhibitor

Prototype: Gentamicin Adverse effect/Administration alert-----------------------------1

* Ototoxicity (early signs: tinnitus, vertigo)
* Reduced kidney function (oliguria, proteinurea, elevated BUN & Cr)

Prototype: Ciprofloxacin: Adverse effects/~~Contraindications~~ ----------------------------1

* Tendon inflammation and rupture

**Chapter 35:**

Mechanism of action of antifungal drugs-------------------------------------------------------1

* Pg 508
* Causes plasma membrane to become porous and leaky

Prototype: Amphotericin B: Administration alert/Interaction------------------------------1

* Infuse slowly!

Nursing Process: Antifungal drugs-Implementation-------------------------------------------1

* Bullets 5, 6, and 7

Prototype: Fluconazole: Adverse effects----------------------------------------------------------1

* SJS, hepatotoxicity

Table 35.4 Griseofulvin, Nystatin Adverse effects--------------------------------------------1

* Underlined ones

Table 35.5: ~~Chloroquine,~~ Quinine: Adverse effects--------------------------------------------1

* Underlined

Nursing Process: Protozoan/Helminthic Infection: Assessment/Implementation------1

* 1st and 5th bullet points for Implementation, page 519

Prototype Drug: Mebendazole Interaction-----------------------------------------------------------------1

* Pg. 523

**Chapter 37:**

Growth Fraction-----------------------------------------------------------------------------------------1

* Ratio of replicating cells to resting cells
* Some normal tissues have high growth fractions, so are more susceptible to the effects of chemotherapy

Special Pharmacotherapy Protocols and strategies for cancer chemotherapy----------1

* Pg 552

Table 37.4 Alkylating Agent Cyclophosphamide:Adverse effect-----------------------------1

* Underlined ones

Prototype Cyclophosphamide Administration Alert------------------------------------------------1

* Pg 556
* Monitor platelets prior to IM administration – if low, hold the dose

Table 37.5 Methotrexate Adverse effects----------------------------------------------------------1

* Underlined ones

Prototype Methotrexate Action and Use/Administration alert-------------------------------1

* Blocks the synthesis of folic acid

Table 37.7 vincristine Adverse effect----------------------------------------------------------------1

* Underlined effects

Table 37.8 Hormones Dexamethasone-------------------------------------------------------------1

* Underlined adverse effects